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EXAMINER				
ROYSTON, ELIZABETH				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,054

Applicant(s)

FUJII ET AL.

Examiner

Elizabeth Royston

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-13 is/are pending in the application.
- 4a) Of the above claim(s) 11-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-10, 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 3-13 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. The finalization in the Official Action dated 3/25/2009 of the restriction requirement in the Official Action dated 2/12/2009 has been withdrawn.
2. The requirement for restriction between groups 1 and 2 in the Official Action dated 2/12/2009 has been withdrawn. Claims 3-10 and 13 are rejoined and examined in the instant Official Action.

3. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 3-10 and 13, drawn to a process for creating a multilayered unstretched film on a metal sheet.

Group 2, claim(s) 11-12, drawn to an apparatus for creating a multilayered unstretched film.

4. The inventions listed as Groups 1 and 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special

technical feature of a multilayered film made by separately heating and separately melting plural thermoplastic resins and an other thermoplastic resin in different extruders; feeding the heated and melted thermoplastic resins and the other thermoplastic resin separately to plural feed blocks where holes are formed on both sides of the lower part of respective melt supply ducts for the plural thermoplastic resins; feeding the other thermoplastic resin through a hole on the end of the melt supply duct for the other thermoplastic resin, which hole is connected to each hole formed on both sides of each melt supply duct; wherein the other thermoplastic resin is led to both sides of the plural thermoplastic resins in a feed block; widening the thermoplastic resins and the other thermoplastic resin through plural manifolds separately connected to the respective feed blocks and extruded out through a die lip of an extrusion T-die onto a casting roll; and wherein the multilayered stretched film is formed so that the other thermoplastic resin coexists on both sides of the plural thermoplastic resins has been previously disclosed by Wenz (US PN 4731004) in view of Mori (JP 2003-291258), Peiffer (US PN 5716570), Komoda (US PN 4476080), and Okazaki (US PN 5389422). For further detail see the rejection of claims 3-6 and 13 under 35 U.S.C. §103 below. Restriction is considered proper since the limitations of the special technical feature as claimed by Applicant were known to one of ordinary skill in the art at the time of the invention and thus do not constitute patentable novelty over the prior art.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To preserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Claim Objections

1. Claims 7, 8, and 9 are objected to because of the following informalities:

Claim 7: for continuity, "another thermoplastic resin" should read as "the other thermoplastic resin" in line 8;

Claim 8: for clarity, "... may form only a part..." might read as "may by itself form a part" in line 4;

Claim 9: for clarity, "... 3000 poises at a shear rate of from..." might read as "... 3000 poise at a 20 to 500s⁻¹ shear rate..." in line 4, poises should read as poise in line

- 3.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation of a shear rate with an upper limit of 5000 sec^{-1} is not present in either the specification or in the original filing of the claims dated 8/30/2006, and thus constitutes new matter.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7: the term "them" in line 6 is indefinite, the term "they" in line 11 is indefinite. For the purposes of examination against the prior art, each 'them' or 'they' has been construed to refer to the last stated element.

Claim 8: the term "inevitably" in line 4 is indefinite as it is unclear how the part is becoming thicker over time. For the purposes of examination against the prior art, that section of the film was construed to be thicker than the body of the film.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 13, 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wenz (US PN 4731004) in view of Mori (JP 2003-291258), Peiffer (US PN 5716570), and Komoda (US PN 4476080).

With regard to claim 13, Wenz teaches a process for producing a multilayered unstretched film comprising a separate heating and melting of plural thermoplastic resins and an other thermoplastic resin in different extruders (col. 2, line 30-32), feeding the heated and melted thermoplastic resins and the other thermoplastic resin separately to plural feed blocks (col. 1, line 32-34, 42-45; col. 8, line 46-48), leading the thermoplastic resin to both sides of the plural thermoplastic resins in a feed block (col. 1, line 42-45; col. 2, line 30-35), widening the thermoplastic resins and the other

thermoplastic resin in a manifold (col. 2, line 29; figure 3, 4, 14) connected to the respective feed blocks (col. 8, line 41-45), and extruding out through a die lip onto a casting roll (col. 1, line 26-28), and wherein the multilayered unstretched film is formed so that the other thermoplastic resin (figure 14, item A1, A2, C1, C2) coexists on both sides of the plural thermoplastic resins (figure 14, item B1, B2).

Wenz does not explicitly teach T-die lips or a multi-manifold die.

Mori teaches a method of producing an unstretched multilayered (human translation, paragraph 36, film A, layer I and II) multicomponent (human translation, paragraph 36 and 37, films A and B, material of layers I and II and olefin monomer material of edge portions) resin film by extruding the film through T-die lips (paragraph 3, line 10) on a multi-manifold die (paragraph 21, line 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the T-die lips and the multi-manifold die in the teaching of Mori in the method in the teaching of Wenz. The rationale to do so would have been the motivation provided by the teaching of Mori, that to use such a multi-manifold die with T-die lips predictably results in the formation of an unstretched multilayered multicomponent resin film with minimized neck-in effects and wasted material (paragraph 3, line 7-10; paragraph 4, line 1-3).

Wenz does not explicitly disclose holes formed on both sides of the lower part of the respective melt supply ducts for the plural thermoplastic resins and feeding the other thermoplastic resin through a hole on the end of the melt supply duct for the other

thermoplastic resin, where the hole is connected to each hole formed on both sides of each melt supply duct.

Peiffer teaches a process for producing multilayered films where holes (figure 3, entrance hole for extruder 2) are formed on both sides of the lower part of the respective melt supply ducts for the plural thermoplastic resins (figure 3, item 6), and feeding the other thermoplastic resin through a hole on the end of the melt supply duct for the other thermoplastic resin (figure 3, item A), the hole being connected to each hole formed on both sides of each melt supply duct (figure 3a, item 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the supply ducts in the teaching of Peiffer as the supply ducts in the teaching of Wenz. The rationale to do so would have been the motivation provided by the teaching of Peiffer, that to use such supply ducts predictably results in the feeding of the other thermoplastic resin so as to form the edge of the film during the production process (col. 7, line 4-5).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to create the multilayered multicomponent film in the teaching of Wenz using a die with multiple manifolds as in the teaching of Mori and the method for feeding of the resin via supply ducts prior to widening the film as in the teaching of Peiffer. The rationale to do so would have been the motivation found in the teaching of Komoda. Komoda teaches the concept of a plurality of combined thermoplastic resin (col. 4, line 35, item 61) and an other thermoplastic resin streams (col. 4, line 45, item 62), widening the plurality of combined resin streams (col. 4, line 18-20; figure 2, area of

item 43), converging the plurality of widened combined resin streams (col. 4, line 25-28; figure 3, item 55), and extruding the resulting film from the die lips (col. 4, line 28; figure 3, item 44), with all processes occurring within the single die. To use such a system predictably results in the successful formation of multilayered multicomponent films (figure 6) comprising multiple resins with different desirable properties (col. 1, line 24-31), solving the problem of forming films from resins with varying (col. 1, line 58-63) and sometimes low (col. 1, line 14) thermal decomposition temperatures.

With regard to claim 3, Wenz teaches rectangular supply ducts and holes (Wenz: col. 3, line 4-7; figure 9a, item 62, 64, 66, and 68).

With regard to claim 4, Wenz does not explicitly disclose that the other thermoplastic resin may by itself form a part thicker than the part of the multilayered plural thermoplastic resins.

Mori teaches that the neck-in edges (paragraph 3, line 7-10; paragraph 4, line 1-3) comprise an other thermoplastic resin (human translation, paragraph 36 and 37, olefin edge portions of film A and B).

Although Mori does not explicitly disclose the other thermoplastic resin areas have a greater thickness than the rest of the multilayered thermoplastic resins, since the process of neck-in inherently results in the uneven thickness of the film along the edge, the other thermoplastic resin in the teaching of Mori would also inherently have a

greater thickness than the multilayered thermoplastic resins comprising the center of the film.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use other thermoplastic resin edges on the multilayered thermoplastic film coating laminated to the metal plate as in the teaching of Mori with the coating method in the teaching of Kobayashi. The rationale to do so would have been the motivation provided by the teaching of Mori that to use an other thermoplastic resin for the edges predictable results in a reduction in the neck-in phenomenon and reduces the amount of waste resin removed (paragraph 3, line 7-10; paragraph 4, line 1-3).

With regard to claim 6, Wenz teaches an opaque resin colored with titanium dioxide (Wenz: col. 9, line 37-40).

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wenz (US PN 4731004) in view of Mori (JP 2003-291258), Peiffer (US PN 5716570), and Komoda (US PN 4476080), as applied for claims 1, 3, and 6 above, and in further view of Okazaki (US PN 5389422).

With regard to claim 5, Wenz in view of Mori, Peiffer, and Komoda does not explicitly teach the physical properties of the multiple resins.

Okazaki teaches that when making laminated thermoplastic resin films, the difference between the melt viscosities of the thermoplastic resins should be less than

2000 poise (col. 14, line 40), as measured at a shear rate of 200 sec^{-1} (col. 20, line 8-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to keep the melt viscosities of the various resins in the teaching of Wenz in view of Mori, Peiffer, and Komoda within 2000 poise as measured at a shear rate of 200 sec^{-1} . The rationale to do so would have been the motivation provided by the teaching of Okazaki, that to keep the melt viscosities within such a range when measured at such a shear rate predictably results in the formation of a film with a stable surface without irregularities in width (col. 14, line 40-43).

13. Claims 7, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (US PN 6645559 B2) in view of Mori (JP 2003-291258), Wenz (US PN 4731004), Peiffer (US PN 5716570), and Komoda (US PN 4476080).

With regard to claims 7 and 8, Kobayashi teaches a method of producing a multilayered resin-coated metal sheet comprising forming a film (col. 3, line 63, item R), ejecting and extruding the film through the die lip of a T-die onto a metal sheet (col. 3, line 65, item 10) to coat the sheet by lamination to produce a resin-coated metal sheet (col. 3, line 63-67), where the width of the resin is larger than the width of the metal sheet (figure 3 and 4, item 10, 16, 17), and cutting the resin parts protruding from both sides of the metal sheet off (col. 4, line 1-5).

Although Kobayashi does not teach a multilayered multicomponent film, Kobayashi does teach that the resin edges extending past the width of the metal sheet

are removed due to the uneven width in the resin film caused by the neck-in phenomenon during extrusion (col. 1, line 14-15; figure 1, item 17).

Mori teaches multilayered (human translation, paragraph 36, film A, layer I and II) multicomponent (human translation, paragraph 36 and 37, films A and B, material of layers I and II and olefin monomer material of edge portions) resin films laminated to a metal sheet (paragraph 1, line 1) that were extruded from multi-manifold dies (paragraph 21, line 3), where the neck-in edges comprise an other thermoplastic resin (human translation, paragraph 36 and 37, olefin edge portions of film A and B) and are removed from the film (human translation, paragraph 36, line 9; paragraph 37, line 7-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use other thermoplastic resin edges on the multilayered thermoplastic film coating laminated to the metal plate as in the teaching of Mori with the coating method in the teaching of Kobayashi. The rationale to do so would have been the motivation provided by the teaching of Mori that to use an other thermoplastic resin for the edges predictable results in a reduction in the neck-in phenomenon and reduces the amount of waste resin removed (paragraph 3, line 7-10; paragraph 4, line 1-3).

Kobayashi in view of Mori does not explicitly disclose teach the details of the die, although Kobayashi in view of Mori does teach a multi-manifold die (Mori, paragraph 21, line 3) with T-die lips (Mori, human translation, paragraph 36, line 7).

Wenz teaches a process for producing a multilayered multicomponent unstretched film (figure 14) comprising a separate heating and melting of plural thermoplastic resins and an other thermoplastic resin in different extruders (col. 2, line

30-32), feeding the heated and melted thermoplastic resins and the other thermoplastic resin separately to plural feed blocks (col. 1, line 32-34, 42-45; col. 8, line 46-48), leading the thermoplastic resin to both sides of the plural thermoplastic resins in a feed block (col. 1, line 42-45; col. 2, line 30-35), widening the thermoplastic resins and the other thermoplastic resin in a manifold (col. 2, line 29; figure 3, 4, 14) connected to the respective feed blocks (col. 8, line 41-45), and extruding the film through the die lips (col. 2, line 53) wherein the multilayered unstretched film is formed so that the other thermoplastic resin (figure 14, item A1, A2, C1, C2) coexists on both sides of the plural thermoplastic resins (figure 14, item B1, B2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of making a film as in the teaching of Wenz for the film in the teaching of Kobayashi in view of Mori. The motivation to do so would have been the rationale found in the teaching of Wenz, that to use such a method predictably results in the formation of multilayered multicomponent films (col. 2, line 25-28) with controlled variations in the optical qualities of the film (col. 2, line 8-11, 43-44).

Kobayashi in view of Mori and Wenz does not explicitly disclose holes formed on both sides of the lower part of the respective melt supply ducts for the plural thermoplastic resins and feeding the other thermoplastic resin through a hole on the end of the melt supply duct for the other thermoplastic resin, where the hole is connected to each hole formed on both sides of each melt supply duct.

Peiffer teaches a process for producing multilayered films where holes (figure 3, entrance hole for extruder 2) are formed on both sides of the lower part of the

respective melt supply ducts for the plural thermoplastic resins (figure 3, item 6), and feeding the other thermoplastic resin through a hole on the end of the melt supply duct for the other thermoplastic resin (figure 3, item A), the hole being connected to each hole formed on both sides of each melt supply duct (figure 3a, item 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the supply ducts in the teaching of Peiffer as the supply ducts in the teaching of Wenz. The rationale to do so would have been the motivation provided by the teaching of Peiffer, that to use such supply ducts predictably results in the feeding of the other thermoplastic resin so as to form the edge of the film during the production process (col. 7, line 4-5).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to create the multilayered multicomponent film in the teaching of Kobayashi in view of Mori and Wenz using a die with multiple manifolds as in the teaching of Mori and the method for feeding of the resin via supply ducts prior to widening the film as in the teaching of Peiffer. The rationale to do so would have been the motivation found in the teaching of Komoda. Komoda teaches the concept of a plurality of combined thermoplastic resin (col. 4, line 35, item 61) and an other thermoplastic resin streams (col. 4, line 45, item 62), widening the plurality of combined resin streams (col. 4, line 18-20; figure 2, area of item 43), converging the plurality of widened combined resin streams (col. 4, line 25-28; figure 3, item 55), and extruding the resulting film from the die lips (col. 4, line 28; figure 3, item 44), with all processes occurring within the single die. To use such a system predictably results in the

successful formation of multilayered multicomponent films (figure 6) comprising multiple resins with different desirable proprieties (col. 1, line 24-31), solving the problem of forming films from resins with varying (col. 1, line 58-63) and sometimes low (col. 1, line 14) thermal decomposition temperatures.

With regard to claim 10, Kobayashi teaches a pigment additive in the resin (col. 8, line 38).

14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (US PN 6645559 B2) in view of Mori (JP 2003-291258), Wenz (US PN 4731004), Peiffer (US PN 5716570), and Komoda (US PN 4476080), as applied for claims 7, 8, and 10 above, and in further view of Okazaki (US PN 5389422).

With regard to claim 9, Kobayashi in view of Mori and Wenz, Peiffer, and Komoda does not explicitly teach the physical properties of the multiple resins.

Okazaki teaches that when making laminated thermoplastic resin films, the difference between the melt viscosities of the thermoplastic resins should be less than 2000 poise (col. 14, line 40), as measured at a shear rate of 200 sec^{-1} (col. 20, line 8-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to keep the melt viscosities of the various resins in the teaching of Kobayashi in view of Mori and Wenz, Peiffer, and Komoda within 2000 poise as measured at a shear rate of 200 sec^{-1} . The rationale to do so would have been the motivation

provided by the teaching of Okazaki, that to keep the melt viscosities within such a range when measured at such a shear rate predictably results in the formation of a film with a stable surface without irregularities in width (col. 14, line 40-43).

Response to Arguments

15. Applicant's arguments with respect to claims 3-10 and 13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Royston whose telephone number is 571-270-7654. The examiner can normally be reached on M-Th 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ER/
Patent Examiner, GAU 1791

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1791